

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-34. (Canceled)

35. (New) A fixing device comprising:

a heating roller made of a magnetic metal;

a coil comprising a plurality of wires;

an exciting circuit that applies a high-frequency current to the coil; and

a core which is arranged inside the heating roller;

wherein the core comprises two grooves, each of the grooves being formed on a surface of the core and runs along a longitudinal direction of the core, the two grooves being placed so as to be opposed to each other in a direction perpendicular to the longitudinal direction of the core, and

wherein the coil is wound on the surface of the core, and parts of the coil are buried in the two grooves.

36. (New) The fixing device according to claim 35 wherein two end portions of the coil, which serve as outgoing line portions of the coil going out of and returning to the core, are taken out of the core and attached to each other.

37. (New) The fixing device according to claim 36, wherein the two end portions are parallel to each other.

38. (New) The fixing device according to claim 36, wherein the two end portions are twisted.

39. (New) The fixing device according to claim 36, wherein the coil is formed of an insulating wire.

40. (New) The fixing device according to claim 35, wherein the core further comprises at least two other grooves, each of the other grooves being formed on a surface of the core in the vicinity of each of two end portions thereof, and wherein parts of the coil are buried in the two other grooves so that a distance between the outer surface of the coil wound on the core and the inner surface of the heating roller is constant.

41. (New) The fixing device according to claim 35, wherein the core is made of a heat resistant resin.

42. (New) A fixing device comprising:
a heating roller made of a magnetic metal;
a coil comprising a plurality of wires;
an exciting circuit that applies a high-frequency current to the coil; and
a core which is arranged inside the heating roller, the core having at least one groove, wherein the groove extends between end portions of the core so as to connect the end portions in a longitudinal direction of the core, and
a part of the coil is buried in the groove.

43. (New) The fixing device according to claim 42, the core further has two guide projections arranged in the longitudinal direction of the core.

44. (New) The fixing device according to claim 43, wherein the coil is first wound along the groove, then wound along the guide projection, and finally wound on the part of the coil buried in the groove.

45. (New) The fixing device according to claim 42, wherein the core has neck portions at both ends thereof, a diameter of each neck portion being smaller than that of a central portion of the core.

46. (New) The fixing device according to claim 45, wherein the part of the coil is wound around the guide projection so as to cover the surface of the neck portion at both ends of the core.

47. (New) The fixing device according to claim 46, wherein the surface of the core in the longitudinal direction has a plurality of through-holes.

48. (New) The fixing device according to claim 42, wherein an outer surface of the heating roller at one side thereof has a gear.

49. (New) The fixing device according to claim 42, wherein the heating roller has bearings at both ends thereof.

50. (New) A fixing device comprising:
a first means for heating a paper being made of at least a magnetic metal;
a second means for generating magnetic flux including a plurality of wires;
a third means for applying a high-frequency current to the second means; and
a fourth means for supporting the second means being arranged inside the first means,
the fourth means having at least one groove,
wherein the groove extends between end portions of the fourth means so as to connect the end portions in a longitudinal direction of the fourth means, and part of the second means is buried in the groove.

51. (New) The fixing device according to claim 50, the fourth means further has two guide projections arranged in the longitudinal direction of the fourth means.

52. (New) The fixing device according to claim 51, wherein the second means is first wound along the groove, then wound along the guide projection, and finally wound on the part of the second means buried in the groove.

53. (New) The fixing device according to claim 50, wherein the fourth means has neck portions at both ends thereof, a diameter of each neck portion being smaller than that of a central portion of the fourth means.

54. (New) The fixing device according to claim 53, wherein the part of the second means is wound around the guide projection so as to cover the surface of the neck portion at both ends of the fourth means.

55. (New) The fixing device according to claim 54, wherein the surface of the fourth means in the longitudinal direction has a plurality of through-holes.

56. (New) The fixing device according to claim 50, wherein the outer surface of the first means at one side thereof has a gear.

57. (New) The fixing device according to claim 50, wherein the first means has bearings at both ends thereof.